Catalog of State Actions
Agriculture and Waste Management (AW) Working Group

A catalog of state-level, GHG-reducing actions and policy options based on actions undertaken or considered by state, local and private actors.

Key to Future Rankings of Options in the Tables that Follow:

Potential GHG Emission Reductions 1/	Potential Cost or Cost Savings 1/ 2/
High (H): At least 1.0 million metric tons (MMt) carbon dioxide equivalent (CO_2e) per year by 2020 (~1% of current WA emissions)	**High (H)**: $50 per metric ton CO_2e (tCO_2e) or above
Medium (M): From 0.1 to 1.0 $MMtCO_2e$ per year by 2020	**Medium (M):** \$5-50/tCO_2e
Low (L): Less than 0.1 $MMtCO_2e$ per year by 2020, or 1 MMtCO2e by 2050	**Low (L):** Less than \$5/tCO_2e
Uncertain (U): Not able to estimate at this time	**Negative (Neg):** Net cost savings
	Uncertain (U): Not able to estimate at this time
1/ Several measures may overlap in terms of emissions reductions and/or cost impacts. Estimates assume measures would be implemented independently from other measures.	
2/ Costs are denoted by a positive number. Cost savings (i.e., "negative costs") are denoted by a negative number.	

Definition of "Priorities for Analysis":
- **High:** High priority options will be analyzed first.
- **Medium:** Medium priority options will be analyzed next, time and resources permitting.
- **Low**: Low priority options will be analyzed last, time and resources permitting.

Notation of Options:
* **Options marked in bold an asterisk (*)** indicate some of the related state actions that are approved or underway, as described further in the companion options description document. TWG members are encouraged to provide information on other relevant actions.

Agriculture and Waste Management (AW)

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Other Considerations: Jobs, Fuel Imports, Externalities, Feasibility	Priority for Analysis	Notes / Related Actions in WA State
AW-1	**PRODUCTION OF FUELS AND ELECTRICITY IN AGRICULTURE**					
1.1	Expanded Use of Biomass Feedstocks for Electricity, Heat and Steam Production*					The 2006 Energy Independence Act established renewable portfolio standards. Related to F-1.1
1.2	In-state Liquid Biofuels Production*					WA passed into several requirements/incentives supporting an in-state biodiesel and ethanol industry Current biodiesel production in the State, 15 facilities on line or in serious planning/development, about 270.5 million gallons per year. Biodiesel sold at 35 stations in WA. Ethanol production is about 435 million gallons per year from seven facilities in the permitting/planning stage. There are four E-85 fueling stations in the State. Related to F-1.2
1.3	Manure Digesters/Other Waste Energy Utilization*					Three anaerobic digester projects were awarded state loans in 2006

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AW-2	**AGRICULTURE – LIVESTOCK**					
2.1	Manure Management (handling and storage, and improve application methods)					
2.2	Changes in Animal Feed (optimize nitrogen for N_2O reduction and/or use supplements to reduce CH4 from enteric fermentation)					
2.3	Rotational Grazing/Improve Grazing Crops and/or Management					
AW-3	**AGRICULTURE – CROP PRODUCTION**					
3.1	Soil Carbon Management					DNR and WESTCARB produced an inventory of terrestrial carbon sequestration opportunities in WA
3.2	Nutrient and Water Management					
AW-4	**AGRICULTURE – LAND USE MANAGEMENT**					
4.1	Land Use Management that Promotes Grassland Cover (.e., convert cropland to grassland or prevent conversion of grassland to croplands)					
4.2	Preserve Open Space/Agricultural Land					

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AW-5	**AGRICULTURE – FARMING PRACTICES**					
5.1	Reductions In On-Farm Energy Use*					Renewable Energy System Cost Recovery (RCW 82.16.110) and Tax on Manufacturers or Wholesalers of Solar Energy Systems: provides incentives for the purchase of locally-made renewable energy products. Incentive payments are provided by electric utilities to customers generating renewable energy (i.e., solar, wind) on their property. The federal Energy Policy Act of 2005 provided several renewable energy incentives.
5.2	Organic Farming					
5.3	Programs to Support Local Farming/Buy Local					
AW-6	**WASTE MANAGEMENT – WASTE MANAGEMENT STRATEGIES**					
6.1	Advanced Recycling and Composting					
6.2	Promotion of Bioreactor Technology					
6.3	Source Reduction Strategies					
6.4	Resource Management Contracting					
6.5	Waste Coal Recapture					
6.6	Prevent Landfilling of					

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	Unprocessed Organic Material					
AW-7	**WASTE MANAGEMENT – LANDFILL GAS STRATEGIES**					
7.1	Flare Landfill Methane at non-NSPS (smaller) Sites					
7.2	Methane & Biogas Energy Programs					Linked to Options 1.3 (Manure Digesters) but directed at municipal/industrial waste streams
7.3	Landfill Methane Energy Programs					
AW-8	**WASTE MANAGEMENT – WASTEWATER ACTIVITIES**					
8.1	Energy Efficiency Improvements					
8.2	Programs to Lower Waste Water Processing Needs					
8.3	Install Digesters and Turbines or Fuel Cells					